Fisheries and Oceans Canada | Pêches et Océans Canada
Science | Sciences
Pacific Region
Canadian Science Advisory Secretariat
Science Response 2012/023

SCIENCE RESPONSE TO INFORMATION REQUESTS SUBMITTED TO THE ENBRIDGE PIPELINE PROJECT ENVIRONMENTAL IMPACT ASSESSMENT HEARINGS RESPECTING NORTHERN ABALONE

Context

Fisheries and Oceans Canada's (DFO) Environmental Assessment and Major Projects Division (EAMP), Pacific Region, requested that DFO Science, Pacific Region, on May 15, 2012, provide information regarding specific Information Requests (IRs) submitted to the Enbridge Review Panel that DFO Science has the expertise to evaluate. As the IRs for which Science advice was requested cover a range of issues and scientific disciplines, separate Science Responses have been developed for each category of IRs, and in some cases specific IRs. In addition to science related questions, some IRs included elements that were questions pertaining to DFO policy, management or legal information. This Science Response addresses the scientific elements of the following questions:

- What information does DFO have on the presence of Northern Abalone in the Project area? Please provide copies of this information. [NGP Response to Federal Government IR No.2, number 2.20; Volume 2, Part 1, section 120]
- Does DFO agree that potential Project effects to Northern Abalone would be limited to acoustic disturbance, even in the event of an accident or malfunction resulting in a spill? INGP Response to Federal Government TR No.2, number 2.20; Volume 2, Part 1, section 120]

This Science Response report is from the Fisheries and Oceans Canada, Canadian Science Advisory Secretariat, Regional Science Special Response Process (SSRP) of May 29th, 2012 on the Science advice in response to information requests submitted by Intervenors to the Enbridge Northern Gateway pipeline project environmental assessment Panel Review Process. Additional publications from this process will be posted as they become available on the Fisheries and Oceans Canada Science Advisory Schedule at www.dfo-mpo.gc.ca/csas-sccs/index-eng.htm.

Background

The Enbridge Northern Gateway Project proposes to ship dilute bitumen from Kitimat, British Columbia to markets in China and California with tankers of the class Very Large Crude Carriers (VLCC) (Vol. 1, B1-2, Enbridge Northern Gateway Project Section 52 Application). The tanker route from Kitimat through confined waterways in British Columbia and then into open waters of Hecate Strait, Dixon Entrance and Queen Charlotte Sound in British Columbia are illustrated in Figure 1. For assessment purposes Enbridge Northern Gateway defines two areas, the Confined Channel Assessment Area (CCAA) (Figure 2) and the Open Water Assessment Area (OWA) which is BC waters to the territorial sea limit (Figure 1). Incoming ships will deliver cargoes of condensate. Enbridge Northern Gateway estimate 71 condensate and 149 oil tankers call in at the Kitimat terminal for a total of 440 transits per year (Vol. 8C, B3-37,

Enbridge Northern Gateway Project Section 52 Application). A marine terminal will be constructed near Kitimat with two tanker berths and one utility berth (Vol. 1, B1-2, Enbridge Northern Gateway Project Section 52 Application). The Project Effected Assessment Area (PEAA) that will be associated with the terminal construction is illustrated in Figure 3.

Two IR submissions were made to the Joint Review Panel (JRP) by DFO. Enbridge Northern Gateway provided responses to requests for information in the IRs. Since then Intervenor review of the Environmental Assessment documents prepared by the proponent (Enbridge Northern Gateway) and of the IRs and the responses by the proponent has resulted in a series of further questions to DFO by Intervenors.

In response to conservation concerns, Fisheries & Oceans Canada closed all abalone fisheries (commercial, recreational, aboriginal) in December 1990. The species was designated as *Threatened* in 1999 by the Committee on the Status of Endangered Wildlife in Canada (COSEWIC) and protected under the Species at Risk Act (SARA) in 2003. The species was up-listed to *Endangered* under SARA in July 2011 following the COSEWIC re-assessment in April 2009, as little or no recovery of the wild abalone population, particularly the larger more fecund component, had been observed (COSEWIC 2009).

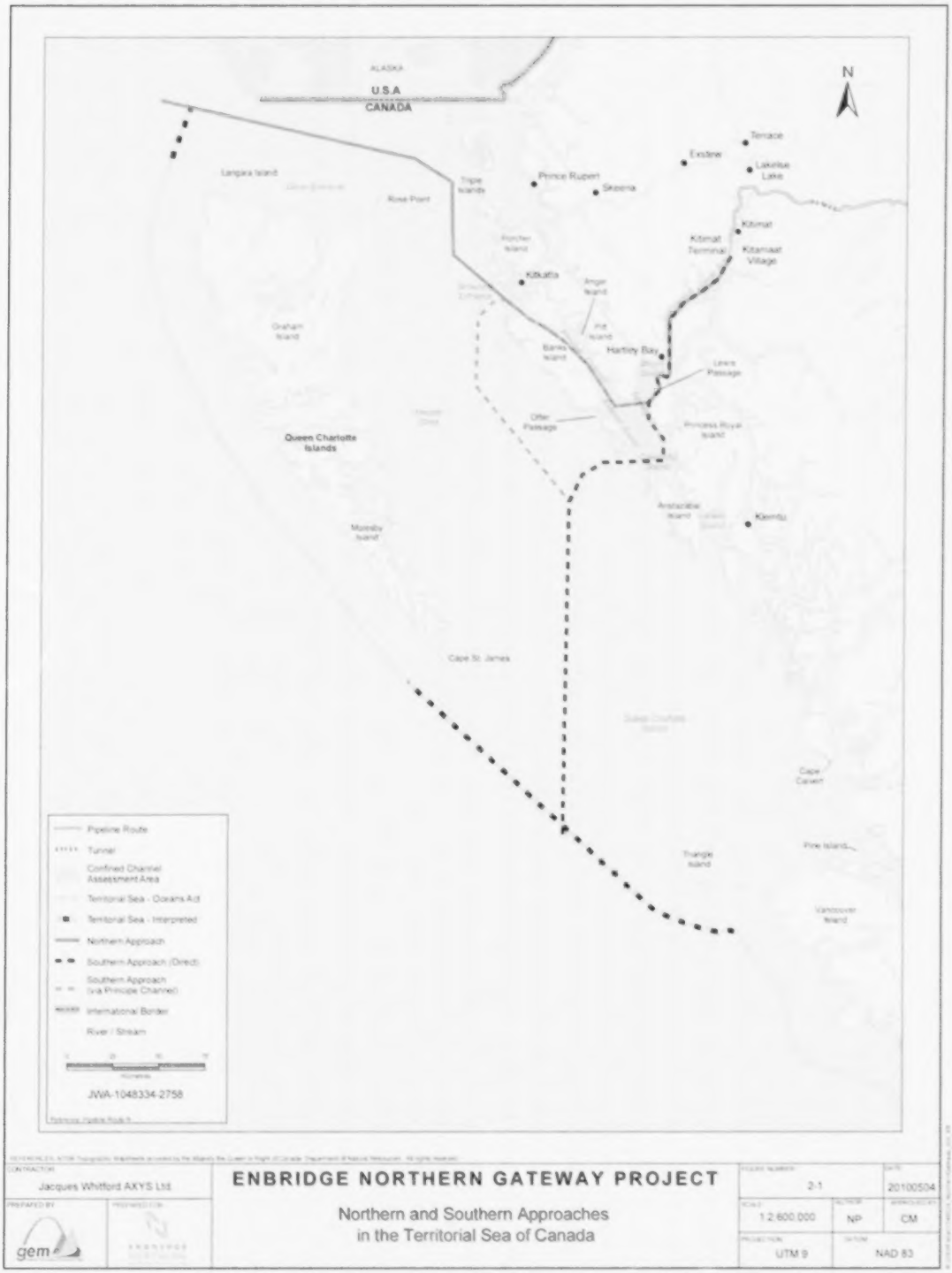

Figure 1. Map illustrating the proposed tanker routes through the Confined Channel and Open Water Assessment Areas (CCAA and OWA). The OWA extends to the territorial sea boundary (from Volume B9-42 Enbridge Northern Gateway Project).

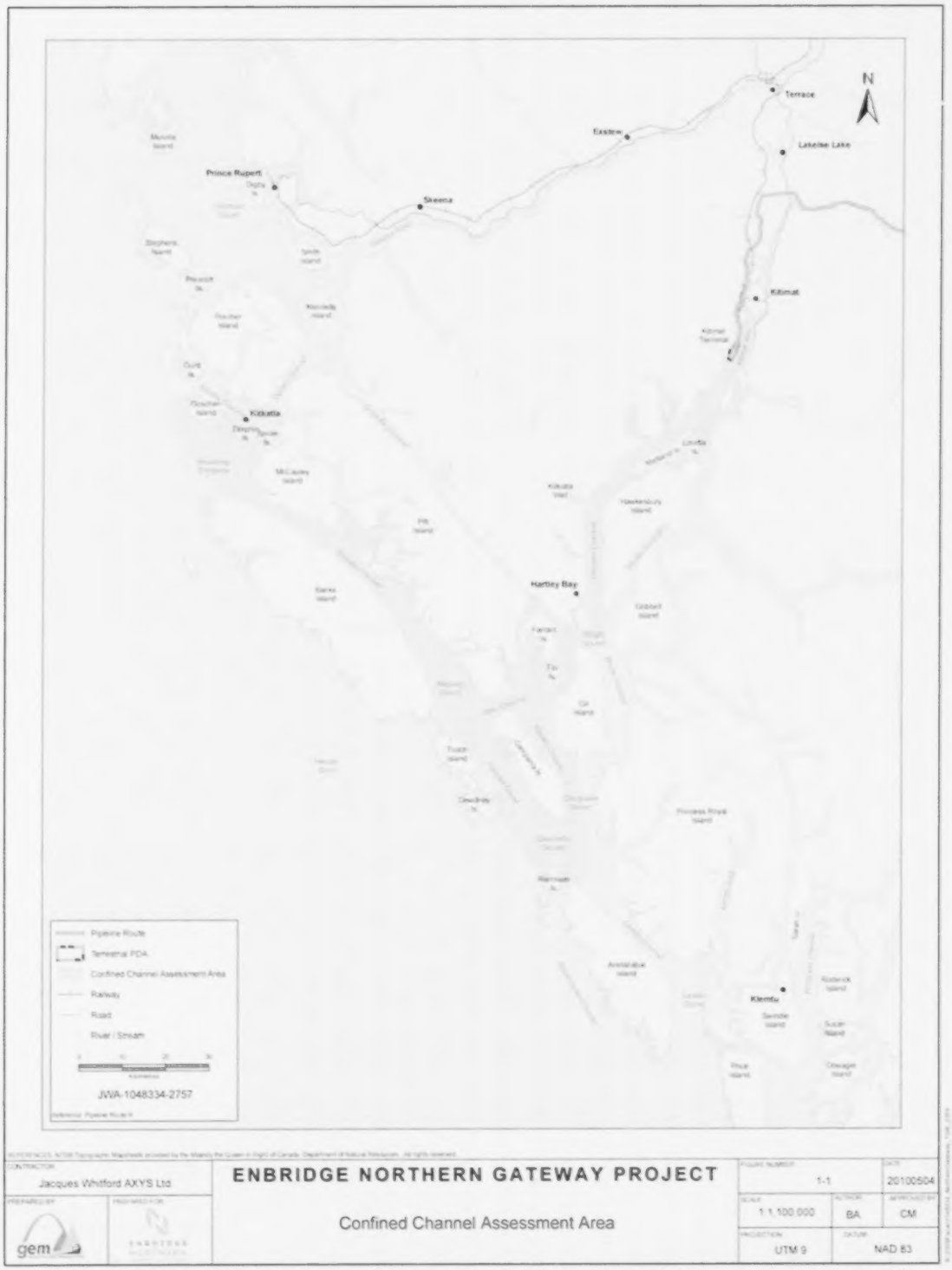

Figure 2. Map illustrating the location and extent of the Confined Channel Assessment Area (CCAA) (from Volume 8B Enbridge Northern Gateway Project Section 52 Application).

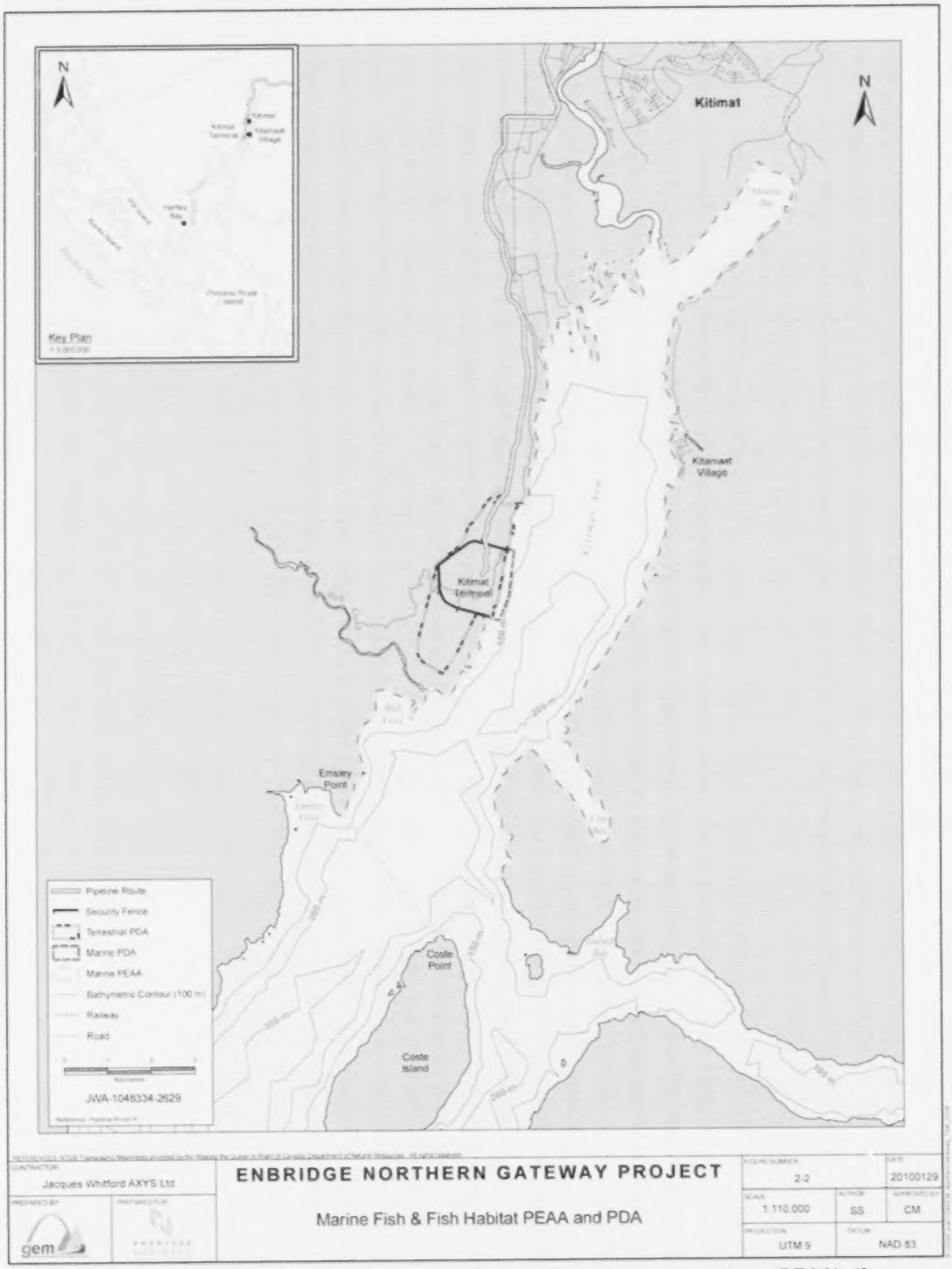

Figure 3. Map illustrating the location and extent of Project Effect Assessment Area (PEAA). (from Enbridge Northern Gateway Project Technical Data Report, Marine Fish and Fish Habitat 2010).

Analysis and Responses

Northern Abalone presence has been documented in Browning Entrance and Estevan Sound, two areas within the Enbridge Northern Gateway Project CCAA (Lucas et al. 2002, Hankewich and Lessard 2008). Northern Abalone presence has not been confirmed within the PEAA, as well as in other portions of CCAA. However, in locations where their presence is unknown, an Impact Assessment Protocol is in place to determine the potential impact on abalone and their habitat (Lessard et al. 2007, Fisheries & Oceans 2012). As abalone can be cryptic, Phase 1 of the Impact Assessment Protocol is used to map abalone habitat, and the presence of abalone habitat is the trigger for proceeding to Phase 2 (abundance surveys) when evaluating any proposed works and developments.

Abalone are not known to be affected by noise and they are not known to be directly affected by shipping and transport (Lessard et al. 2007). However, Northern Abalone are distributed from the intertidal zone to approximately 10m depth; a range that is vulnerable to the effects of oil pollution. While the effects of oil spills on subtidal species and communities are not well known, intertidal habitats are known to be sensitive to oil spills with sensitivity increasing with decreasing wave exposure (Sloan 1999). Therefore, it would be expected that Abalone would be vulnerable to impacts as the result of an oil spill. The Recovery Potential Assessment for Northern Abalone (Lessard et al. 2007) did not specifically assess the risk of oil spills as they are unpredictable events and are not part of an allowable harm assessment of legislated or permitted human activities.

Conclusions

Northern Abalone have been documented in the CCAA and their presence is unknown in the PEAA. The long-term chronic sublethal impacts of oil pollution are to a great extent unknown for nearshore ecosystems (Sloan 1999). The determination of the level of impacts, acute or long-term, is impaired by the lack of baseline data. The Impact Assessment Protocol for abalone has a monitoring phase designed to ensure knowledge is acquired so that mitigation measures can be developed in response to potential impacts (Lessard et al. 2007; Fisheries & Oceans 2012).

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Sources of Information

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